Carbohydrate Density & How To Calculate It

The term "carbohydrate density" means the percent of the food mass that is carbohydrate minus the fiber component. It is easy to calculate the carbohydrate density of any food. Just divide the grams of carbohydrate in a particular food (excluding the grams of fiber it contains) by the total gram weight of the food to get a percentage. The carbohydrate density increases as more non-fibrous carbs are packed into a given quantity of food. A healthy carbohydrate density is about 23% or less.[1] Eating foods that have a higher density than 23%, would put more stress on your metabolism and potentially lead to the degenerative diseases of societies eating processed foods. A government website where you can find grams of carbohydrates and grams of fiber in a specific weight of food is http://ndb.nal.usda.gov/ndb/foods. [2] Here is how to use this website:

- Go to website page.
- Enter the specific food you are calculating in the space provided on the top of the web page and click "GO".
- Various preparations for this food will appear. Click on the preparation you desire.
- Note the Grams of Carbohydrate per 100 grams of food, and note the Grams of Fiber per 100 grams of food.
- Subtract the grams of fiber from the grams of carbohydrates to get the non-fibrous grams of carbohydrate per 100 grams of the food. That will be the carbohydrate density of that particular food.

Modern food processing is, unfortunately, very good at boosting carbohydrate density. Here is a list of some foods from low-density to high-density carbohydrates:

Sampling of foods with carbohydrate density ≤ 23% (from lowest to about 23% excluding fiber):

- Chicken, roasted thigh and skin = 0.0%
- Beef = 0.0%
- Lamb = 0.0%
- Pork = 0.0%
- Mackerel = 0.0%
- Eggs, whole poached = 0.7%
- Spinach, raw = 1.4%
- Cauliflower, boiled without salt = 1.8%
- Swiss chard, raw = 2.1%
- Cheese, gouda = 2.2%
- Turnips, raw = 4.6%

- Kale, raw = 5.2%
- Macadamia nuts = 5.2%
- Carrot, raw = 6.8%
- Beets, raw = 6.9%
- Onion, raw = 7.6%
- Honeydew melon, raw = 8.3%
- Orange, raw Florida = 9.1%
- Apple, raw with skin = 11.4%
- Kiwi fruit, raw = 11.7%
- Lentils, boiled = 12.2%
- Leek, raw = 12.4%
- Parsnip, raw = 13.1%
- Black beans, boiled = 15.0%
- Ginger root, raw = 15.8%
- Pistachios, raw = 17.2%
- Buckwheat groats, roasted, cooked = 17.2%
- Sweet potato, baked in skin = 17.4%
- Quinoa, cooked = 18.5%
- White potato, baked in skin = 19.0%
- Brown rice, medium grain cooked = 19.5%
- Wild rice, cooked = 19.5%
- Banana, raw = 20.2%
- 85% Cocoa bar (Alter Eco Dark Blackout) = 22.5%

Sampling of modern foods with carbohydrate density > 23% (from 23% to the highest excluding fiber):

- Cheeseburger, single patty, plain = 26.0%
- Cheese pizza = 26.8%
- White rice, medium grain cooked = 28.3%
- Plantains, raw = 29.6%
- Nachos with cheese = 31.7%
- White bread = 34.7%
- Multigrain bread = 35.9%
- Popcorn, oil-popped microwave = 37.0%
- French fries = 37.6%
- Rye bread = 42.5%
- Bagel, wheat = 44.8%
- Potato chips, plain salted = 50.7%
- Oats = 55.7%
- Granola bar, plain = 59.1%
- Whole wheat hot cereal = 65.7%
- Oat Bran cereal, toasted Quaker Mother's = 66.8%
- Cookies, graham cracker = 74.3%
- Pretzels, hard plain salted = 77.0%
- Rice cakes, plain brown rice = 77.3%

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[1] Spreadbury, Ian. Comparison with ancestral diets suggests dense acellular carbohydrates promote an inflammatory microbiota, and may be the primary dietary cause of leptin resistance and obesity. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy. 2012:5 175-189.
[2] NDL/FNIC Food Composition Database. Agricultural Research Service National Agricultural Library (modified Dec 7, 2011). Available from http://ndb.nal.usda.gov/ndb/foods. Accessed August 2015.